

HERBERT HOOVER DIKE REHABILITATION PROJECT

Ingrid Bon, P.E.

Project Manager Forward

U.S. Army Corps of Engineers

Jacksonville District

March 2016

***Trusted Partners Delivering Value,
Today and Tomorrow***



US Army Corps of Engineers
BUILDING STRONG®





HHD Problems (Failure Modes)



BUILDING STRONG

Internal erosion (seepage and piping)

- Through embankment
- Through foundation

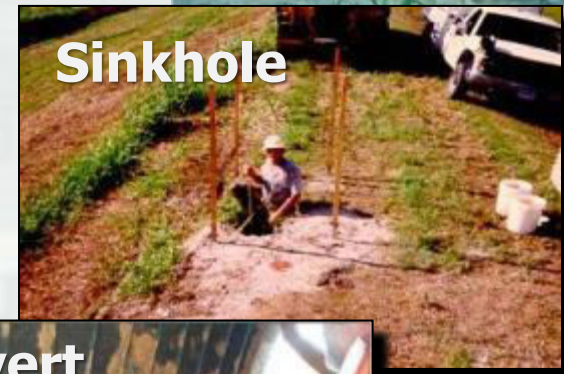
Culvert structures

- Soil erosion into conduit
- Erosion/Piping around conduit

Overwash/Overtopping

- Erosion of downstream slope

Dam Safety Action Classification (DSAC) Level 1- Assigned 2006

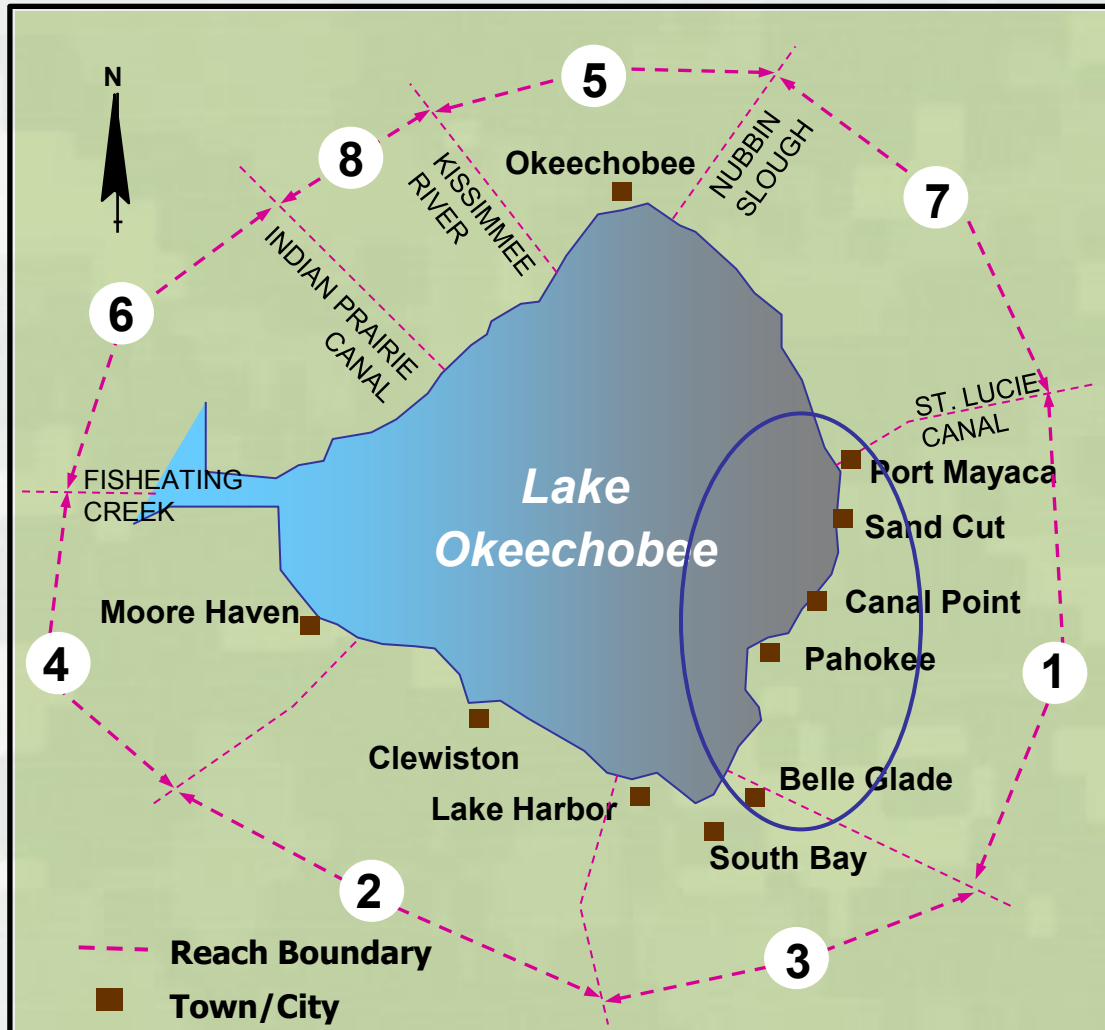




Herbert Hoover Dike Solutions



BUILDING STRONG



Major Rehabilitation Report (MRR) 2000

- Reach 1 initial phase
- Cutoff wall constructed

Federal Water Control Structure Culverts 2011

- 32 Federal Culverts within the entire HHD system
- Replacement or Removal

Dam Safety Modification Study (DSMS) 2016

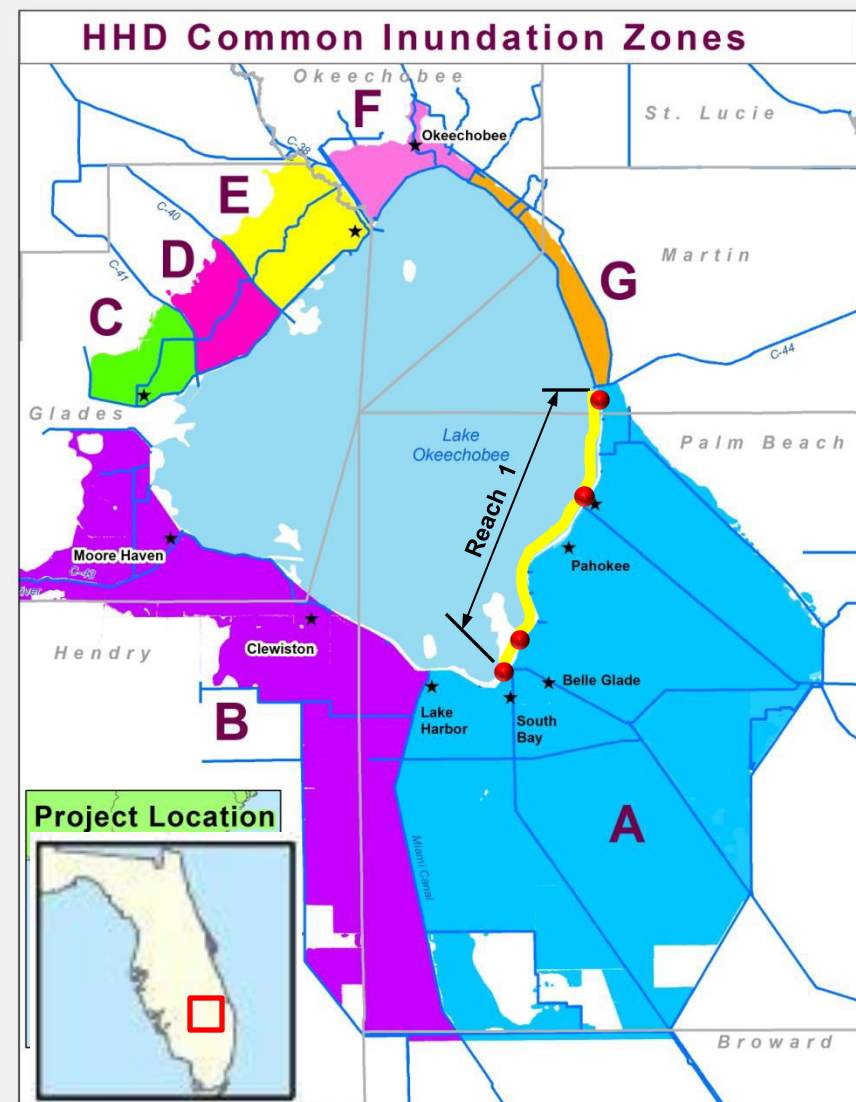
- System-wide approach
- Risk reduction measures below tolerable guidelines
- Prioritize Implementation



HHD Reach 1 Cutoff Wall



BUILDING STRONG



Approval from 2000 HHD Major Rehabilitation Report

Completed – 21.4 miles of cutoff wall installed between 2007 and 2013

Planned – Cutoff wall tie-ins to 3 existing structures and 1 bridge with contract award in FY16

Complete the continuous seepage barrier through Reach 1 providing the risk reduction benefits to the adjacent communities

Reach 1 Cutoff Wall Status

Cutoff Wall Installation Complete



Cutoff Wall Gap Closures Planned

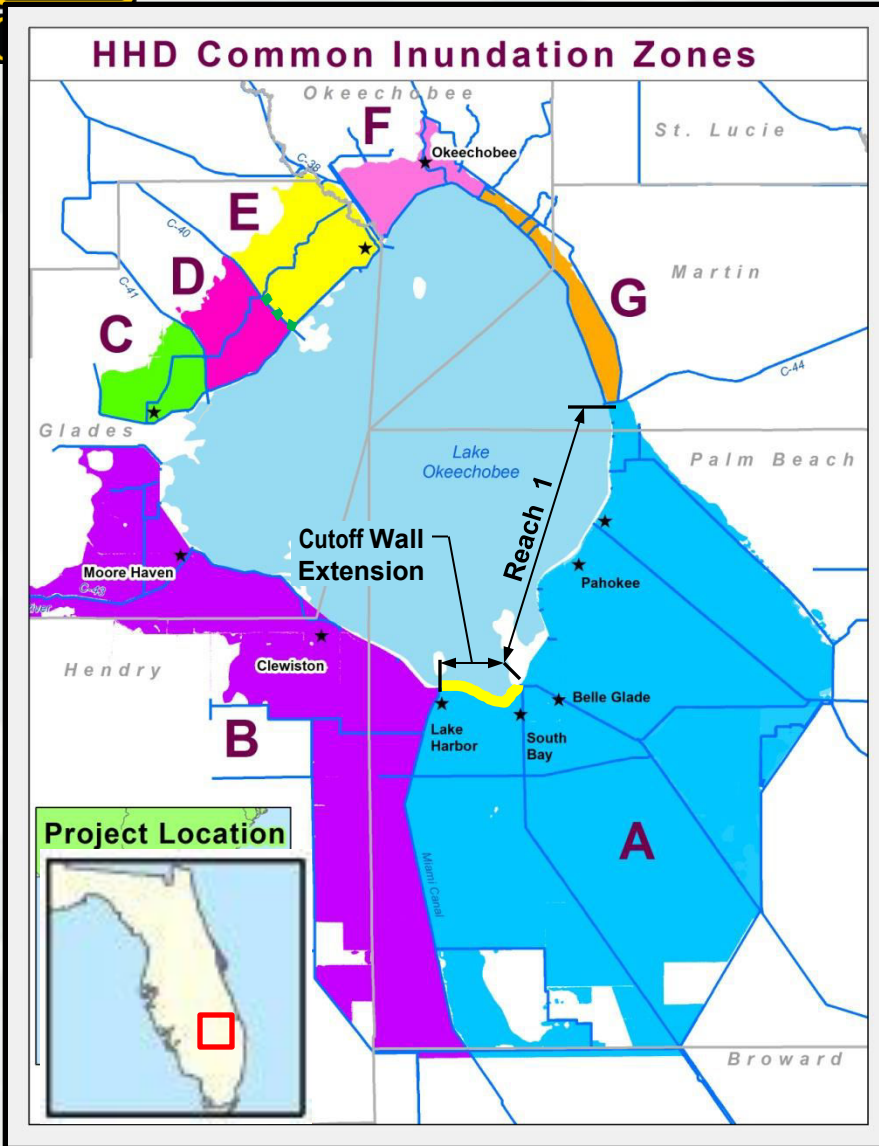




Reach 1 Cutoff Wall Extension



BUILDING STRONG



Approval from 2015 HHD Major Rehabilitation Report Supplement

Planned – 6.6 miles of cutoff wall installed with contract award in FY17 and completion in 2020

Impact – Final embankment remediation project to complete repairs reducing risks to inundation Zone A

Complete the continuous seepage barrier through Inundation Zone A providing the risk reduction benefits to the adjacent communities and allow a recommendation for accreditation to FEMA for this area of HHD



HHD Culvert Replacements



BUILDING STRONG

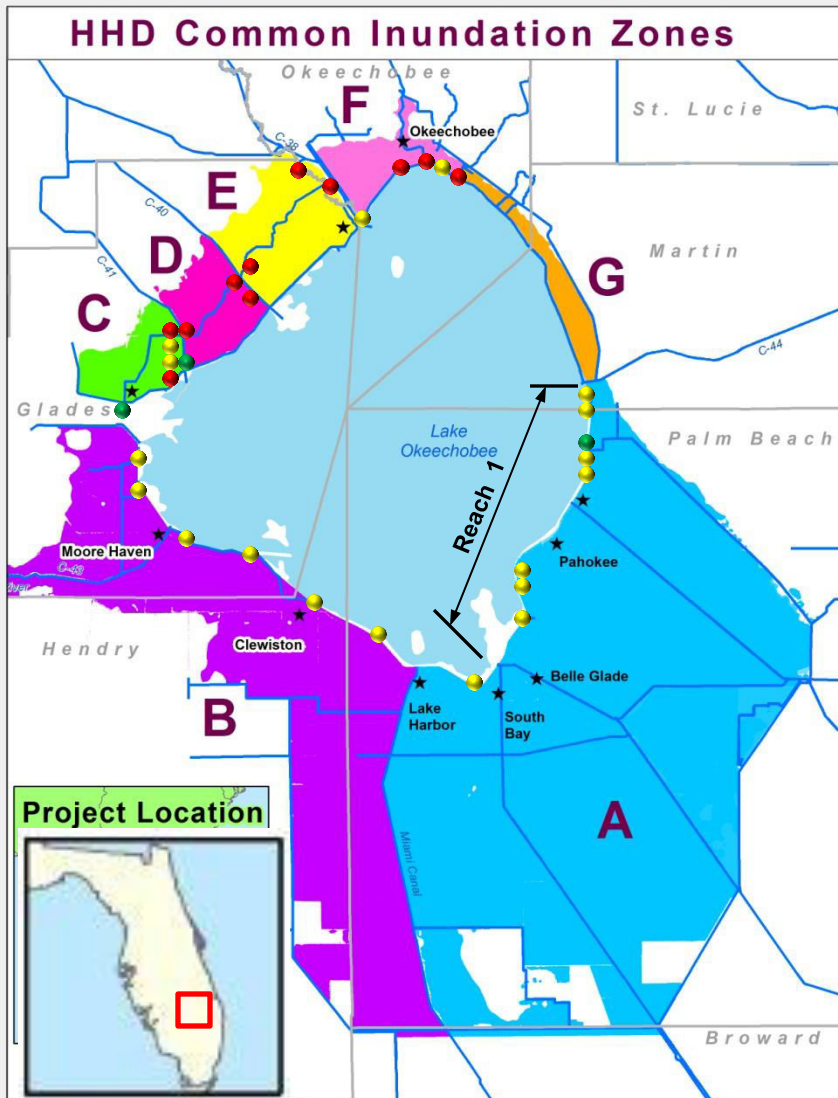
Approval from 2011 HHD Culvert Letter Report

Completed – 1 removal and 2 replacements

Ongoing – 10 contracts with 18 replacements completed by 2020

Planned – 5 contracts with 8 replacements; 3 contracts with 3 abandonments to be scheduled and completed by 2022

Complete repairs at the highest points of failure through the HHD system



Water Control Structure (Culvert) Status

Construction Contract Complete	●
Construction Contract Ongoing	●
Construction Contract Planned	●



Culvert Replacement Phases



BUILDING STRONG



Culvert 12 (S-275) - Excavation



Culvert 5A (S-281) - Foundation



Culvert 13 (S-272) - Reconstruction



Culvert 11 (S-269) - Completion



U.S. ARMY

Dam Safety Modification Study

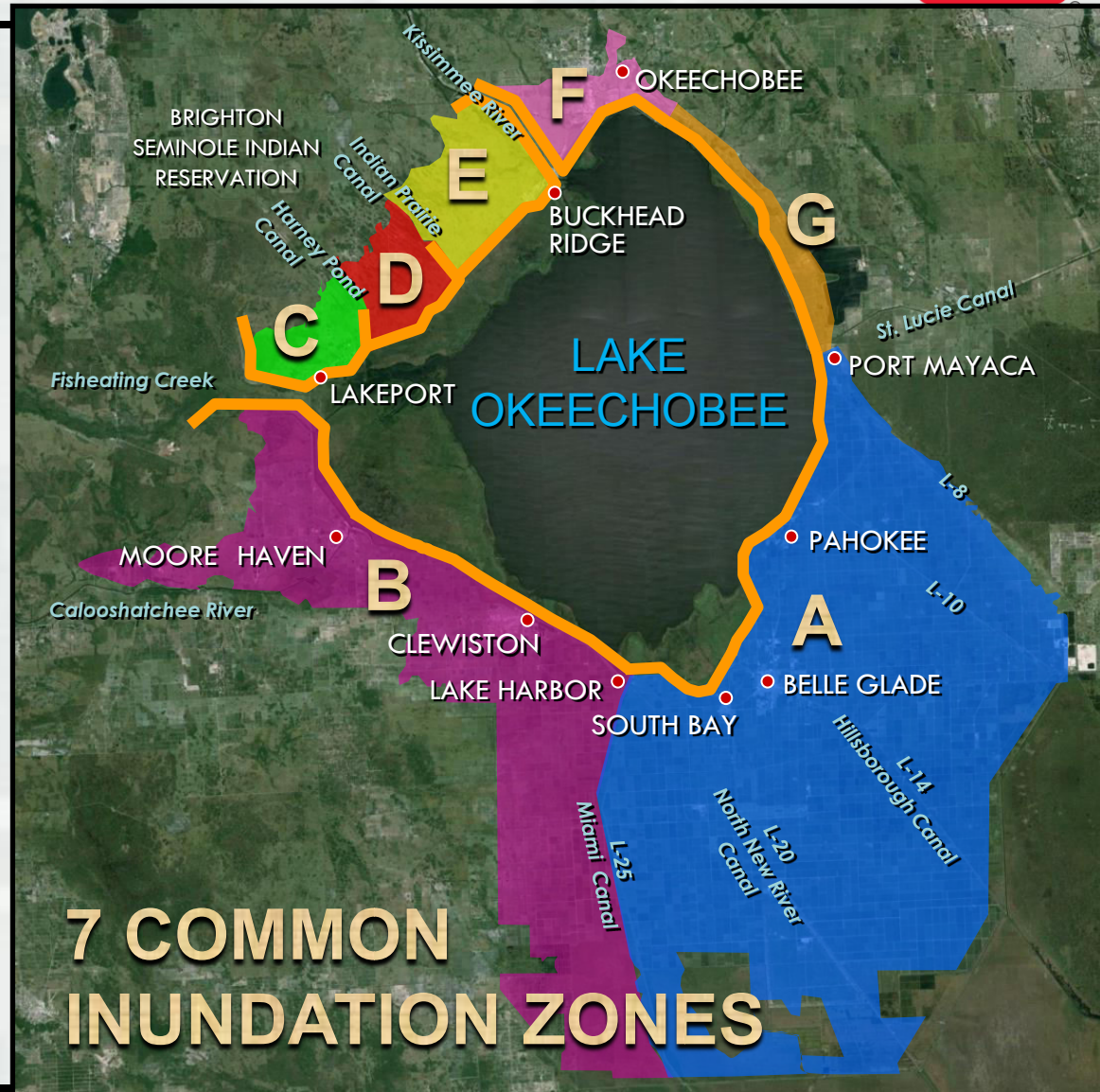


Risk Assessment – Analysis performed on 32 dam segments within the 7 common inundation zones to identify and prioritize remediation

Modification Report – TSP in December 2015 with final report by the end of summer 2016

Impact – Final measures to reduce the risks for the entire system around the lake

- Recommendation for FEMA accreditation by inundation zone to begin in 2016
- Construction project implementation in 2019
- Opportunity to begin regulation schedule study

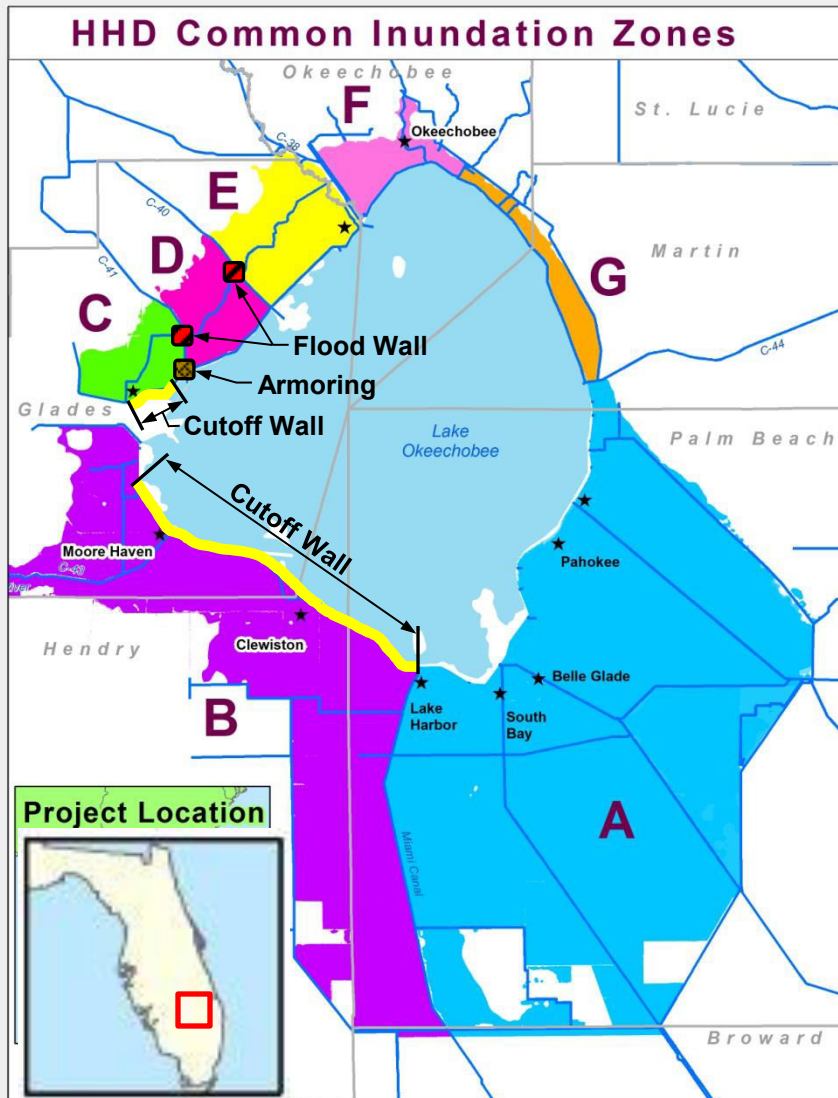




Tentatively Selected Plan (TSP)



BUILDING STRONG



Approval by USACE Dam Safety Officer Required

Common Inundation Zone B

- 24.5 miles of cutoff wall

Common Inundation Zone C

- 4.1 miles of cutoff wall
- HP bridge abutment armoring

Common Inundation Zone D

- S-71 embankment flood wall
- S-72 embankment flood wall

Draft DSMR Tentatively Selected Plan

Cutoff Wall Locations

Embankment Armoring Locations

Embankment Flood Wall Locations





Implementation Timeline



BUILDING STRONG

Water Control Structures (Culverts)

- Southern part of HHD completed by 2020
- Northern part of HHD completed by 2022

Reach 1 Cutoff Wall Gap Closure

- Construction from 2016 to 2018

Reach 1 Cutoff Wall Extension

- Construction from 2017 to 2020

Dam Safety Modification Report (DSMR)

- Draft EIS public review period ended on 23 Feb 2016
- DSMR approval by the summer of 2016
- Construction start in 2019 with expected duration of 5 to 7 years (prioritization and funding dependent)





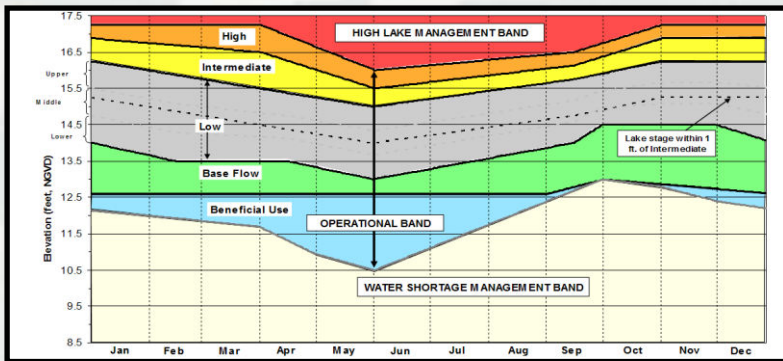
Lake Regulation Schedule



BUILDING STRONG



- Dam Safety Modification Study Risk Assessment utilized the current Lake Okeechobee Regulation Schedule (LORS)
- Proposed revisions to the current LORS will require an updated risk evaluation and a future lake regulation study for informed decision making
- A study for a new regulation schedule could be undertaken concurrently while risk reduction features identified in the DSMR are constructed
- A revised regulation schedule is not expected before 2020 and the timeline for implementation of any new regulation schedule will depend on the magnitude of change from the current LORS



Questions?

